Claims:

1. A copolymer of ethylene and an alpha olefin having 3 to 10 carbon atoms, said polymer having

(a) a density in the range 0.900 to 0.940

(b) an apparent Mw/Mn of 2 - 3.4

(c) I_{21}/I_2 from 16 to 24

(d) activation energy of flow from 28 to 45 kJ/mol

(e) a ratio Ea(HMW)/Ea(LMW) >1.1, and

(f) a ratio g'(HMW)/g'(LMW) from 0.85 to 0.95

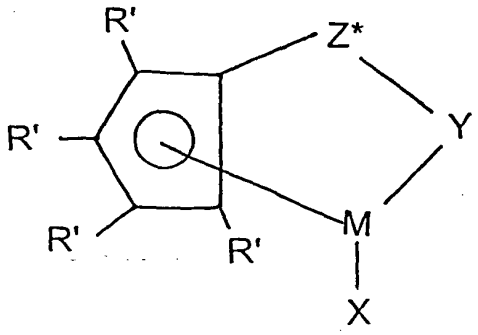
2. A copolymer according to claim 1 having an apparent Mw/Mn in the range 2 to 3 and I_{21}/I_2 from 18 to 24.

3. A copolymer according to claim 2 having an apparent Mw/Mn in the range 2.5 to 3, an activation energy of flow from 30 to 35 KJ/mol., and a ratio Ea(HMW)/Ea(LMW) >1.2.

4. A copolymer according to any of the preceeding claims having a titanium content in the range 0.1 to 2.0 ppm.

5. A process for preparing copolymers according to claims 1 to 4 comprising polymerising ethylene and alpha olefins having 3 to 10 carbon atoms in the presence of a catalyst system comprising

(a) a metallocene complex of the general formula



wherein:-

R' each occurrence is independently selected from hydrogen, hydrocarbyl, silyl, germyl, halo, cyano, and combinations thereof, said R' having up to 20 nonhydrogen atoms, and optionally, two R' groups (where R' is not hydrogen, halo or cyano) together form a divalent derivative thereof connected to adjacent positions of the cyclopentadienyl ring to form a fused ring structure;

X is a neutral η^4 bonded diene group having up to 30 non-hydrogen atoms, which forms a π complex with M;

Y is -O-, -S-, -NR*-, -PR*-,

M is titanium or zirconium in the + 2 formal oxidation state;

Z* is SiR^*_2, CR^*_2, $SiR^*_2SIR^*_2$, $CR^*_2CR^*_2$, $CR^*=CR^*$, $CR^*_2SIR^*_2$, or GeR^*_2, wherein:

R* each occurrence is independently hydrogen, or a member selected from hydrocarbyl, silyl, halogenated alkyl, halogenated aryl, and combinations thereof, said R* having up to 10 non-hydrogen atoms, and optionally, two R* groups from Z* (when R* is not hydrogen), or an R* group from Z* and an R* group from Y form a ring system,

(b) an activator, and

(c) a support.

6. A process according to claim 5 wherein the metallocene complex is a titanium complex.

7. A process according to claim 5 wherein the metallocene complex is (t-butylamido) (tetramethyl-η^5- cyclopentadienyl) dimethyl silanetitanium -η^4-1,3-

pentadiene.

8. A process according to claims 5 or 7 wherein the alpha olefin is 1-hexene.

9. A process according to claims 5 to 8 carried out continuously in the gas phase.

10. A film or other article of manufacture produced from a copolymer according to claims 1 to 4.

11. A film exhibiting a haze determined by ASTM D-1003 ranging from 3 to 20, a dart impact measured by ASTM D-1709 of >100g, a hexane extractables content of 0.1 - 1.5%, said film comprising a copolymer of ethylene and an alpha-olefin having 3-10 carbon atoms and which has

(a) a density in the range 0.900 to 0.940

(b) an apparent Mw/Mn of 2 - 3.4

(c) I_{21}/I_2 from 16 to 24

(d) activation energy of flow from 28 to 45 kJ/mol

(e) a ratio Ea(HMW)/Ea(LMW) >1.1, and

(f) a ratio g'(HMW)/g'(LMW) from 0.85 to 0.95

12. A film according to claim 11 wherein the copolymer has an apparent Mw/Mn in the range 2.5 to 3, an activation energy of flow from 30 to 35 KJ/mol., and a ratio Ea(HMW)/Ea(LMW) >1.2.

13. A blend of two or more components comprising

(a) from about 1 weight percent to about 99 weight percent of a copolymer according to claims 1 to 4, and

(b) from about 99 weight percent to about 1 weight percent of one or more resins that are different from component (a).

14. A copolymer comprising ethylene and an alpha olefin having 3 to 10 carbon atoms having

(a) a density in the range 0.900 to 0.940

(b) an apparent Mw/Mn of 2.5-3.0

(c) I_{21}/I_2 of 15 to 25, and

(d) a melting point in the range 95°C to 135°C.

15. A film exhibiting a haze determined by ASTM D-1003 ranging from 3 to 20, a dart impact measured by ASTM D-1709 of >100g, a hexane extractables content of 0.1 - 1.5%, said film comprising a copolymer of ethylene and an alpha-olefin having 3-10

carbon atoms and which has

(a) a density in the range 0.900 to 0.940

(b) an apparent Mw/Mn of 2.5-3.0

(c) I_{21}/I_2 of 15 to 25, and

(d) melting point in the range 95°C to 135°C